BACKGROUND

• Metabolic dysfunction-associated steatotic liver disease (MASLD) is a prevalent comorbidity among people with HIV (PWH).
• The first line of treatment for MASLD is weight loss.
• Semaglutide is a GLP-1 receptor agonist that is highly effective for weight loss among overweight and obese populations.
• The SLIM LIVER study sought to investigate use of semaglutide as treatment for MASLD among PWH.
• However, muscle loss often accompanies weight loss, which may have negative impacts on physical function.
• The purpose of this secondary analysis was to examine the impact of semaglutide on muscle volume, muscle fat, and physical function among PWH.

METHODS

• Participants subcutaneously administered 1.0 mg of semaglutide per week for 24 weeks
• Liver magnetic resonance imaging (MRI) and physical function testing was performed at baseline and Week 24. Psoas muscle volume and muscle fat were captured from the liver MRI and utilized for the analysis.
• Physical function was assessed by timed (5x and 10x) chair rise (seconds) and 4-meter gait speed (meters/second).
• Mean change, 95% CI, and associated p-value from baseline to Week 24 was estimated using linear regression models. Associations were evaluated using Spearman’s correlations.

RESULTS (continued)

• Absolute psoas muscle volume decreased by 1.49 mL (CI: -2.15, -0.83); no significant change seen in absolute psoas muscle fat (Figure 3).
• PWH >60 years old had greatest decrease in muscle volume, but there were no statistically significant differences among other subgroups.
• Change in psoas volume was modestly correlated with change in intra-hepatic triglycerides (Figure 4A) and BMI (Figure 4B). No other correlations found among psoas volume and changes in waist circumference, fasting glucose, HOMA-IR, fasting total, LDL, or HDL cholesterol (all p>0.10, data not shown).

SUMMARY

• Among PWH taking low-dose semaglutide for 24 weeks, there was a loss of muscle volume concomitant with weight loss.
• Physical function was maintained despite this loss in volume.
• Interventions that preserve muscle mass while taking semaglutide may help improve physical function.

FUNDING

SLIM LIVER is supported by UM1 AI068634, UM1 AI068636, UM1 AI106701, ACTG, and McGovern School of Medicine at UTHouston. This analysis was also supported by NIAID T32AI150547 to GLD and NIA K24AG082527 to KME.